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Early Institutional Lessons from the CVISN Model Deployments:
Checklists for Success

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In 1996, a model deployment program launched deployment of CVISN in eight states across the country: California, Colorado, Connecticut, Kentucky, Michigan, Minnesota, Oregon, and Washington. Representatives of these states are attending workshops and benefiting from the lessons learned by Maryland and Virginia, two prototype states that were used to develop CVISN systems. In support of the US DOT's deployment goal, this report will extend this transfer of knowledge and experience to states that may consider implementing CVISN in the future. Special emphasis is given to the variety of institutional lessons that have been learned as CVISN progresses in the pilot states.

The report offers checklists for institutional changes useful for CVISN, and reflects the reasons why a state official would choose to take certain actions and the effort required. Eight general areas of institutional changes in states were explored: state policies and procedures, state laws and regulations, organizational structure, interagency cooperation and coordination, interactions with other states and levels of government, interactions with the motor carrier industry, staffing and training, and management and staff buy-in.

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I. Executive Summary

The Federal Highway Administration's Office of Motor Carriers has launched a model deployment program for Commercial Vehicle Information Systems and Networks, or CVISN. CVISN is an electronic information infrastructure that links State, Federal, commercial trucking information and other systems and communication networks to support more streamlined, automated commercial vehicle operations. CVISN applies advanced technologies and information systems to enhance safety through more timely and accurate information to the roadside enforcement officers; simplifies credentialing and tax administration by providing point of sale services to the carriers; and increases the efficiency of freight movement through electronic screening systems.

The US DOT has established a voluntary goal of encouraging the public and private sectors to deploy CVISN in all interested States by the year 2005. There are three primary CVISN components: Credential Administration, Safety Information Exchange and Roadside Electronic Screening. The initial operating systems are those systems that provide the initial operating capabilities of CVISN and are referred to as Level 1 deployments. Level 1 capabilities for Credential Administration include end-to-end electronic processing for International Fuel Tax Agreement (IFTA) and International Registration Plan (IRP) and for state connection to the IFTA and IRP Clearinghouses. The Level 1 deployment goal is for at least 10 percent of the transaction volume to be handled electronically. Level 1 capabilities for Safety Information Exchange include connection to SAFER and the development of a state Commercial Vehicle Information Exchange Window (CVIEW) system or equivalent to support the exchange of snapshot data within the state or to other states. The Level 1 deployment goal is for ASPEN or equivalent systems at all major inspection sites. Level 1 deployment for Roadside Electronic Screening calls for electronic screening to be implemented at a minimum of one fixed or mobile inspection site, ready to replicate at other sites.

In 1996, a model deployment program launched deployment of CVISN in eight states across the country: California, Colorado, Connecticut, Kentucky, Michigan, Minnesota, Oregon, and Washington. Representatives of these states are attending workshops and benefiting from the lessons learned by Maryland and Virginia, two prototype states that were used to develop CVISN systems. In support of the US DOT's deployment goal, this report will extend this transfer of knowledge and experience to states that may consider implementing CVISN in the future. Special emphasis is given to the variety of institutional lessons that have been learned as CVISN progresses in the pilot states.

The report offers checklists for institutional changes useful for CVISN, and reflects the reasons why a state official would choose to take certain actions and the effort required. The institutional changes range from legal and policy through communications.

There are two primary audiences for the report: states that have begun deployment of CVISN, and states that are considering deployment. For states that are already participating, sharing the lessons learned across states could provide valuable feedback. For states that are considering

deployment, the information conveyed might help them make better decisions, about how to proceed. In addition, motor carriers in those states may find the insights and cooperative arrangements described beneficial for their own interactions with state agencies.

In 1992, all states began to assess the role of institutional issues on CVO processes and programs, either on their own or as part of regional consortia. These studies were completed in 1994, giving the states time to consider the results and decide on appropriate courses of action. About 40 states did so through the creation of ITS/CVO Business Plans as part of the ITS/CVO Mainstreaming program. The initial institutional studies provide the base on which this study of institutional benefits is built by identifying the choice of topics to explore. For the purpose of this study, eight general areas of institutional changes in states were explored:

- *State policies and procedures:* policies and procedures related to administrative processes, safety information exchange, and electronic screening, at both the agency and statewide level
- *State laws and regulations:* laws and regulations related to agency commercial vehicle activities
- *Organizational structure:* agency organizational structure, including the relationship between CVISN and current commercial vehicle program operational staff
- *Interagency cooperation and coordination:* issues related to history of coordination, choice of participants, management structure of the state, and relationship to other ITS efforts
- *Interactions with other states and levels of government, including local and federal:* interaction on commercial vehicle issues
- *Interactions with the motor carrier industry:* relationship with the trucking industry, including associations and advisory groups
- *Staffing and training:* staffing skills and levels
- *Management and staff buy-in:* process of obtaining buy-in compared to projects of similar magnitude

Within the set of eight well-prepared states chosen as pilot states, five were selected for study of institutional changes and benefits. They were chosen for their diversity and to explore a range of issues, such as regional cooperation and the effect of including different numbers of partners:

California. California has a long history of involvement in ITS, and multiple agencies are involved in the project. It also shares a border with Oregon, another CVISN model deployment state, but is not in a formal cooperative relationship.

Oregon. Oregon has commercial vehicle activities centralized within one office and chose to partner with Washington to do the CVISN project jointly.

Washington. Washington has extensive metropolitan ITS experience, including a metropolitan model deployment site in Seattle. Along with Oregon, Washington is participating in the only paired-state CVISN pilot.

Kentucky. Kentucky, like Oregon, has all commercial vehicle regulatory functions within a single agency. It is also the lead state in two ITS/CVO Mainstreaming regions.

Connecticut. Connecticut has multiple agencies involved in the project and less experience with ITS/CVO than some of the other pilot states. It is also located within the I-95 corridor, which has a strong history of interstate cooperation.

A number of general suggestions can be generated through considering the experience of the model deployment states. Implicit in this checklist is the assumption that the state has or will define a project manager, advisory group, and systems architect, as the model deployment states have done:

- Address high level policy, organizational structure, laws and regulations.
- Cooperate to take advantage of relative strengths of all partners.
- Recognize the need for proper communications.
- Plan training for both program staff and motor carrier employees.
- Manage the expectations of all partners.

The suggestions describe actions that the CVISN states have taken, which have helped their deployment. In the discussion, the reasons or benefits of the action and the effort that was needed is described. These qualitative benefits and costs are summarized in the following table.

Suggestion	Benefits	Costs
Address high level policy, organizational structure, laws and regulations.		
Support high level policies encouraging interagency cooperation, information technologies, and automation, and link the CVISN project to those policies.	• Fewer hurdles to overcome in obtaining buy-in for CVISN • Greater support during implementation • Greater synergy across departments and organizational units	• Staff time to carry out policies
Separate commercial vehicle programs from related programs, consolidate as many commercial vehicle functions into one organization as possible, and align the organization with statewide policy priorities.	• Improve efficiency and customer service • Help achieve buy-in for CVISN by reducing internal program competition over priorities or budgets • Improve communications in development of CVISN • Reduce inter-agency coordination problems	• Staff time to develop and implement staffing, budgeting and legislative changes
Review laws and regulations for potential barriers, especially issues related to electronic transactions and protection of sensitive private company data.	• Enable implementation by addressing state specific issues	• Staff time to identify changes, research and draft legislation, and work with the legislature for passage
Cooperate to take advantage of relative strengths of all partners and interested parties.		
Identify all interested parties and arrange agreements and working	• Enable development of plans to keep all parties informed, as	• Staff time to talk to all potentially interested parties

Suggestion	Benefits	Costs
arrangements to accommodate the appropriate level of involvement for each party.	well as incorporate their concerns in a timely manner	and determine desired involvement
Recognize the internal organization of a multi-agency project and emphasize its strengths.	• Better utilize staff resources and expertise • Take advantage of each agency's strengths to circumvent constraints and limitations	• Staff time to develop MOU • Increased staff time for coordination across agencies
Take advantage of expertise, testing, and feedback available through cooperation with interested parties.	• Create and maintain support for program • Take advantage of technical or marketing/outreach expertise or resources • Address interstate institutional issues early enough to avoid requiring changes midstream	• Staff time to maintain communication with interested parties
Recognize the need for proper communications		
At the start of the project, list all necessary communications and develop a strategy to ensure that they are carried out.	• Ensure all necessary communications are carried out in support of cooperative activities	• Staff time to develop communications plan
Allow additional time to obtain buy-in and consider assigning an individual to coordinate all "communications" or "marketing" if multiple agencies are involved.	• Set a realistic timeline • Ensure all necessary contacts are made	• Staff time for coordination and making contacts
Maintain support for the project by reporting progress frequently to upper management and elected officials.	• Maintain support for project during development	• Staff time for briefings
Maintain regular communication with program staff.	• Gain insights into best ways to develop CVISN • Enable staff to provide accurate and up-to-date information to motor carriers with whom they have contact • Allay fears about changes in jobs	• Staff time
Keep industry associations "in the loop" and take advantage of their contacts and business experience to market CVISN to motor carriers.	• Associations can participate in communicating with their members about CVISN, and even marketing the program	• Staff time
Plan training for both program staff and motor carrier employees	• Educate potential users of new procedures about how they work, so that the full benefits can be realized	• Inclusion in formal training programs, on-the-job training and updates at staff meetings
Manage the expectations of all partners	• Maintain support for the project	• Staff time

The philosophy behind the suggestions discussed in this report is that CVISN is a natural part of efforts to improve and streamline state government through interagency cooperation and the use of advanced technologies. With the exception of staffing changes resulting from reorganization, interviewees were generally unable to quantify the costs or benefits of institutional changes separate from the project itself. However, they acknowledged that the changes were either necessary or beneficial to successful implementation.

Most of the suggestions address how the necessary cooperation and communication can be developed, no matter where the states start. Certain preconditions help CVISN implementation because they are in harmony with it:

- High level policy support for interagency cooperation and advanced technologies
- Good working relations among all commercial vehicle programs, or a centralized program
- A good relationship with the motor carrier industry

Whether or not these factors exist, the project can be improved by comprehensive planning and incremental implementation:

- Involve interested agencies to the appropriate degree and ensure that their expectations are carefully managed
- Consider and organize the communication necessary for a high visibility project

II. Introduction

A. Overview

The Federal Highway Administration's Office of Motor Carriers has launched a model deployment program for Commercial Vehicle Information Systems and Networks, or CVISN. CVISN is an electronic information infrastructure that links State, Federal, commercial trucking information and other systems and communication networks to support more streamlined, automated commercial vehicle operations. CVISN applies advanced technologies and information systems to enhance safety through more timely and accurate information to the roadside enforcement officers; simplifies credentialing and tax administration by providing point of sale services to the carriers; and increases the efficiency of freight movement through electronic screening systems.

The US DOT has established a voluntary goal of encouraging the public and private sectors to deploy CVISN in all interested States by the year 2005. There are three primary CVISN components: Credential Administration, Safety Information Exchange and Roadside Electronic Screening. The initial operating systems are those systems that provide the initial operating capabilities of CVISN and are referred to as Level 1 deployments. Level 1 capabilities for Credential Administration include end-to-end electronic processing for International Fuel Tax Agreement (IFTA) and International Registration Plan (IRP) and for state connection to the IFTA and IRP Clearinghouses. The Level 1 deployment goal is for at least 10 percent of the transaction volume to be handled electronically. Level 1 capabilities for Safety Information Exchange include connection to SAFER and the development of a state Commercial Vehicle Information Exchange Window (CVIEW) system or equivalent to support the exchange of snapshot data within the state or to other states. The Level 1 deployment goal is for ASPEN or equivalent systems at all major inspection sites. Level 1 deployment for Roadside Electronic Screening calls for electronic screening to be implemented at a minimum of one fixed or mobile inspection site, ready to replicate at other sites.

In 1996, a model deployment program launched deployment of CVISN in eight states across the country: California, Colorado, Connecticut, Kentucky, Michigan, Minnesota, Oregon, and Washington. Representatives of these states are attending workshops and benefiting from the lessons learned by Maryland and Virginia, two prototype states that were used to develop CVISN systems. In support of the US DOT's deployment goal, this report will extend this transfer of knowledge and experience to states that may consider implementing CVISN in the future. Special emphasis is given to the variety of institutional lessons that have been learned as CVISN progresses in the pilot states.

The report offers checklists for institutional changes useful for CVISN, and reflects the reasons why a state official would choose to take certain actions and the effort required. The institutional changes range from legal and policy through communications.

There are two primary audiences for the report: states that have begun deployment of CVISN, and states that are considering deployment. For states that are already participating, sharing the lessons learned across states could provide valuable feedback. For states that are considering deployment, the information conveyed might help them make better decisions, about how to proceed. In addition, motor carriers in those states may find the insights and cooperative arrangements described beneficial for their own interactions with state agencies.

B. Methodology

In 1992, all states began to assess the role of institutional issues on CVO processes and programs, either on their own or as part of regional consortia. These studies were completed in 1994, giving the states time to consider the results and decide on appropriate courses of action. About 40 states did so through the creation of ITS/CVO Business Plans as part of the ITS/CVO Mainstreaming program. The initial institutional studies provide the base on which this study of institutional benefits is built by identifying the choice of topics to explore. For the purpose of this study, eight general areas of institutional changes in states were explored:

- *State policies and procedures:* policies and procedures related to administrative processes, safety information exchange, and electronic screening, at both the agency and statewide level
- *State laws and regulations:* laws and regulations related to agency commercial vehicle activities
- *Organizational structure:* agency organizational structure, including the relationship between CVISN and current commercial vehicle program operational staff
- *Interagency cooperation and coordination:* issues related to history of coordination, choice of participants, management structure of the state, and relationship to other ITS efforts
- *Interactions with other states and levels of government, including local and federal:* interaction on commercial vehicle issues
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- *Management and staff buy-in:* process of obtaining buy-in compared to projects of similar magnitude

Changes that were made in programs, procedures, and relationships leading up to CVISN or occurring as a result of CVISN were considered. For each change, the reasons for making the change (i.e. perceived benefits) and the costs or difficulties associated with that change were considered. It is important to note that many reasons not directly related to CVISN have led to changes in programs over the years. For instance, efforts by the state legislature to improve efficiency and cut costs led to the creation of the Motor Carrier Transportation Branch in Oregon.

The Volpe Center study team obtained information by reviewing previous reports and project documentation, interviewing key CVISN participants, and monitoring the on-going activities of the pilot states through the CVISN evaluation coordinators. These previous reports included the

institutional issues studies previously mentioned and other reports provided by state staff or downloaded from state web sites. Project documentation included state CVISN proposals and project plans as well as progress reports where available. About 40 people in five states were interviewed.

An interview guide was developed to explore each of the institutional topic areas listed above. Specific questions were included based on issues that had been raised in previous institutional issues studies and other knowledge gained by the study team. The guide ensured that the interviewers gained appropriate information from the interviewees, including an understanding of each of the institutional topic areas for each of the commercial vehicle programs operating in the state, changes occurring in those topic areas connected with CVISN, reasons for the changes, and the effort involved in making the changes.

In addition to interviewing state staff involved with the CVISN projects, discussions were held with federal staff who had been involved in evaluating state proposals and ranking them for selection. Through these conversations, a better understanding was gained of the types of experience and arrangements that were viewed most favorably and which led to the states' selection as pilots. This understanding aided in the synthesis and interpretation of the state staff interviews.

C. Site Selection and Description

The sites selected for this institutional benefits study are a subset of the states selected to participate in the CVISN model deployment. Therefore, in order to understand the context for the following suggestions, the criteria for both selections should be considered.

CVISN Pilot state selection

Eight states out of twelve that applied were selected to receive federal funds to conduct seven model deployments. Washington and Oregon applied to conduct the project jointly. Although 25 states had originally expressed interest in participating, fewer than half actually submitted applications. The selected states were chosen to participate based on both technical and institutional readiness. Application evaluators gave institutional readiness issues more weight than technical, because they believed institutional readiness is more difficult to achieve than technical readiness. They sought states in which the agencies involved with commercial vehicles were ready to work together and have good existing cooperation. States were viewed more favorably if they had ITS plans finished or in progress. Evaluators held positive views of indications of strong leadership, including commitment of 100% of the project manager's time, and interest in cooperation with the current federal evaluation. The amount of the nonfederal match above the minimum cost sharing of 50% was not considered in order to keep a level playing field.

Consequently, most of the states involved in the pilot already had significant involvement in ITS as well as institutional arrangements that evaluators believed were well suited for CVISN

implementation. In some cases, the states had been making changes in their programs for years that prepared them in an evolutionary fashion for the improvements to be brought by CVISN.

Selection for this report

Within this set of eight well-prepared states, five were selected for study of institutional changes and benefits. They were chosen for their diversity and to explore a range of issues, such as regional cooperation and the effect of including different numbers of partners:

California. California has a long history of involvement in ITS, and multiple agencies sharing this long history are involved in the project. It also shares a border with Oregon, another CVISN pilot state, but is not in a formal cooperative relationship.

Oregon. Oregon has commercial vehicle activities centralized within one office and chose to partner with Washington to do the CVISN project jointly.

Washington. Washington has extensive metropolitan ITS experience, including a metropolitan model deployment site in Seattle. Along with Oregon, Washington is participating in the only paired-state CVISN pilot.

Kentucky. Kentucky, like Oregon, has all commercial vehicle regulatory functions within a single agency. It is also the lead state in two ITS/CVO Mainstreaming regions.

Connecticut. Connecticut has multiple agencies involved in the pilot and less experience with ITS/CVO than some of the other pilot states. It is also located within the I-95 corridor, which has a strong history of interstate cooperation.

III. Checklists for Success

A number of general suggestions can be generated through considering the experience of the model deployment states. Implicit in this checklist is the assumption that the state has or will define a project manager, advisory group, and systems architect, as the model deployment states have done:

- Address high level policy, organizational structure, laws and regulations.
- Cooperate to take advantage of relative strengths of all partners.
- Recognize the need for proper communications.
- Plan training for both program staff and motor carrier employees.
- Manage the expectations of all partners.

The suggestions describe actions that the CVISN states have taken, which have helped their deployment. In the discussion, the reasons or benefits of the action and the effort that was needed is described.

This report is structured around these five general suggestions. The section on laws and organizations deals with the legal, regulatory, procedural, organizational and policy environment

in which commercial vehicle activities take place, including staffing levels. The section on cooperation considers interagency, interstate, state and local, state and federal, and state and industry interactions. Communication addresses all training and communications issues encountered, including management, staff, and industry. The section on training considers both program staff and motor carrier employees. The section on expectations addresses being realistic and balancing the messages that are sent to all parties.

A. Address high level policy, organizational structure, laws and regulations.

The legal, policy, and organizational environment in which CVISN is considered and implemented can have a major effect on the ease of obtaining buy-in and developing the program and can potentially affect the success of the program. It is the context in which CVISN occurs, and therefore, laws, policies, and organizations need to be considered and addressed explicitly.

Nevertheless, it is unlikely that CVISN will be the sole motivation to making changes of the magnitude considered in this section. Changes to laws, regulations, policies, and organizations tend to occur because of much larger issues than a single project. Consequently, while CVISN might act as a catalyst for some changes, there is a range of actions that could be beneficial for CVISN, but could create problems when viewed at a larger scale.

- Support high level policies encouraging interagency cooperation, information technologies, and automation, and link the CVISN project to those policies.
- Separate commercial vehicle programs from related programs, consolidate as many commercial vehicle functions into one organization as possible, and align the organization with statewide policy priorities.
- Review state laws and regulations for potential barriers, especially issues related to electronic transactions and protection of sensitive private company data.

Support high level policies encouraging interagency cooperation, information technologies and automation, and link the CVISN project to those policies.

Few specific *policy changes* are necessary to implement CVISN, but positive high level policies on interagency cooperation, information technologies, and automation are important. The greater the commitment toward automation at the level of state elected and appointed officials, the fewer hurdles will need to be overcome in obtaining buy-in for CVISN, the greater the support will be during implementation, and the greater synergy can occur across departments and organizational units.

General support at the level of the governor and legislature can lead to multiple related projects gaining support at the agency level. The Governor of Washington initiated a push for increased interagency cooperation several years ago. As a result, the three agencies involved in the CVISN pilot had gained experience working with each other prior to the project and saw the pilot as an extension of current state level policy. In Kentucky, "Empower Kentucky" is a state initiative led by the Governor and approved by the legislature to examine programs for opportunities to make state government more efficient and effective through improved organization of work activities,

better equipment, and improved use of technology, training, and management practices. CVISN fits neatly in that general policy. Connecticut recently established a new state agency, the Department of Information Technology, which will be in charge of all new technology procurements, thereby elevating these issues in importance.

The motivation for these policies has largely been a desire to improve efficiency and service to constituents. By increasing cooperation or automation, the same or better service could be provided at less cost. Because the initiative for these efforts was taken at the highest levels of state government, staff time was not needed to develop these policies, just carry them out.

Separate commercial vehicle programs from related programs, consolidate as many commercial vehicle functions into one organization as possible, and align the organization with statewide policy priorities.

Three types of prior changes in organization help achieve buy-in and improved communications: (1) separating commercial vehicle programs from related programs, (2) consolidating as many commercial vehicle programs into one organization as is possible, and (3) aligning the organization with statewide policy priorities.

Although these three changes could be beneficial for the implementation of CVISN, they may not be appropriate for all states. If a state wants to create an organization that is structured to separate commercial vehicle functions from other programs and consolidate them, then reorganizing to achieve that goal can be a major effort involving changes in staffing, budgeting, and possibly legislation. CVISN is designed to reduce the need for reorganizations, but this effort may be warranted if existing organizational structures impede progress toward policy goals, such as improved customer service and efficiency.

Related to changes in the policy environment are changes in organizations. As previously noted, Connecticut's policy change was manifested in the creation of a new department. At this early stage in CVISN deployment, the organizational structure of the commercial vehicle program in the state is affecting CVISN much more than CVISN is affecting the organizational structure. Later, some states expect minor organizational changes for streamlining as CVISN affects staffing.

The difficulty of the change depends on how much needs to be done, and how well it is planned. Stand-alone organizations require dedicated planning, management, and support services staff that would have been shared if it were part of a larger organization. The budget needs to be produced separately from the original organizations from which the program is drawn, and there may be an ambiguous history of costs on which to rely. If enforcement functions or credentialing responsibilities change agencies, legislation and rules may need to be changed to specify the new agency as responsible. For instance, in Oregon, the Motor Carrier Transportation Branch (MCTB) was created after the state legislature passed legislation that placed the group within the Driver and Motor Vehicle Services Branch (DMV) and funded it through the DMV budget. While the change went smoothly, the MCTB has fewer staff devoted to planning and other support of that nature than they would have had if the Branch had been created originally as a

stand-alone branch. Consequently, by necessity more operational staff get involved in planning activities.

The underlying reasons states have made these organizational changes were to improve efficiency and customer service within an overall commercial vehicle program. Since the CVISN program shares these goals, states that assess their overall existing programs and then made these organizational changes are well positioned to implement CVISN. States that wish to achieve these goals would benefit the most by incorporating these changes for the overall commercial vehicle program, which in turn, would facilitate the implementation of CVISN.

Separate commercial vehicle programs from related programs

Most of the states selected for this study originally had commercial vehicle credentialing as part of larger programs. Since the underlying purpose was the same, as in registration, it was logical to group commercial vehicles with all other vehicles. However, because the number of passenger car registrations is much greater than the number of commercial vehicle registrations, registration processes get designed around automobiles rather than commercial vehicles.

Prior to CVISN, higher visibility of commercial vehicle issues, in some cases as a result of industry lobbying, led to efforts to separate commercial vehicle programs from other programs. By separating commercial vehicles activities, the procedures addressing commercial vehicles could be better tailored so that commercial vehicle owners would receive better service. Several of the states have recently moved registration of commercial vehicles from the group that deals with passenger car registrations. Kentucky moved International Registration Plan (IRP) and International Fuel Tax Agreement (IFTA) Clearinghouse transactions to the same department in order to improve efficiency.

By separating commercial vehicles from all other vehicles or tax sources, a dedicated commercial vehicle program does not experience any internal competition over priorities or budget with other groups. Once the budget has been decided at a higher level, either the agency or legislature, management only chooses among commercial vehicle priorities.

Consolidation of commercial vehicle programs

Projects shared among organizations must achieve buy-in from all participating organizations before they can proceed. When a project can be done entirely within one organization, fewer interests need to be considered before consensus is reached.

Agencies accountable to an elected or appointed board have different constraints placed on their decisions than agencies reporting directly to the Governor. Coordinating across these different types of agencies can lead to complications. For instance, in one of the states, an elected board oversees the taxation agency, while the other agencies involved in CVISN report to the governor. As a result, the agencies involved in CVISN have chosen to use differing contracting procedures. The taxation agency prefers not use sole source contracting, which has been used by the other agencies on some past projects. In the past, the taxation agency has avoided becoming involved

in some projects where the other agencies had chosen to use sole source contracting before discussing the project with the taxation agency. For CVISN, all agencies have been involved from the beginning, so the sole source contracting issue has been avoided.

When more functions report to the same management, there is also less competition over priorities. For instance, in Oregon, all information systems staff were taken from their positions within individual programs, and centralized in a Finance and Administration Branch. When this function was taken out of the Motor Carrier Transportation Branch, there was concern within the MCTB that sharing information systems staff with other groups would lead to the staff being directed according to priorities of other groups, and being less responsive to the specific needs of the MCTB. This concern has been unfounded so far. The real issue has been the need for a singular information systems resource to focus on an enterprise-wide priority to address Y2K remediation.

States with commercial vehicle programs in fewer organizations benefit from improved communication among team members. In Oregon and Kentucky, resolving issues and keeping staff informed requires nothing more than routine day-to-day interactions. In a state with multiple agencies participating, communication requires both high level official interagency memos as well as informal staff level communication. In Connecticut, where six agencies participate in CVISN activities, a Management Coordinator, in addition to the Project Manager, from the lead agency ensures that all involved are kept informed of key issues.

Alignment with statewide policy priorities

Some reorganizations can align projects better with budget priorities. For instance, the Washington State Department of Transportation (WSDOT) restructured their programs to indicate whether they were improving, preserving, or maintaining infrastructure. For Washington, this new structure helps to communicate CVISN better as a project that is preserving existing infrastructure rather than improving it. Since the legislature is more willing to fund preservation or maintenance than improvements, it is important for them to be able to distinguish under which category CVISN falls. Other reorganizations have resulted from statewide policy initiatives. Kentucky's move to consolidate IRP and IFTA functions in the same organization came from a statewide effort to automate processes and eliminate internal barriers to increase production and efficiency.

Review state laws and regulations for potential barriers, especially issues related to electronic transactions and protection of sensitive private company data.

At this stage in the development of CVISN, few states have identified laws or regulations that need changes. In fact, some participants were pleased with how well CVISN had been designed to minimize changes.

Separate from the legal changes needed for organizational change previously noted, there are no changes that need to be made by all states, but state laws and regulations related to electronic transactions seem to create the most issues that need to be addressed. Several states noted that there are requirements for signatures on applications, and laws would need to be changed in order to accept electronic signatures. There may also be some difficulties in accepting electronic funds transfer without new legislation. For instance, in Oregon, state agencies are required to use Oregon-based banks. The only Oregon-based bank capable of doing electronic funds transfer was bought by an out-of-state bank, and is, therefore, no longer eligible for use by state government.

In February 1997, Federal legislation was proposed to address another issue related to payment. Because it is expected that small companies will prefer to pay by credit card, some states have looked into that possibility. Credit card companies have refused to allow states to pass transaction fees through to the companies applying for credentials. For states that do not want to absorb the cost of the transaction fees, they are left with the choice of revamping their fee structure to allow a "cash discount" or forgoing the possibility of allowing credit card payment. The bill that was introduced in the House of Representatives prohibits credit card companies from refusing to allow states to pass transaction fees through to people owing taxes, fines or other criminal or civil penalty; a motor vehicle or other registration fee; or a fee charged for the performance of any function customarily provided by governmental entities.[1] There was no floor action on the bill.

Motor carrier concern about competitors gaining access to individual company data prompted new legislation in Oregon restricting access to the data only for "public needs". Other states interviewed have not felt the need to address this issue through legislation, instead using a private, third party contractor to manage the data. Under the arrangements that they have, the states believe that the private company is not subject to the same disclosure laws to which the government agencies are.

Legal change can take a great deal of effort, depending on the magnitude of the change, although it may be the only way to allow certain changes. Connecticut officials described the process as starting with each CVISN agency writing up what changes are needed, going to their representative point person to research and write draft legislation, and then working with the legislature to pass it. For example, when the Department of Motor Vehicles (DMV) needed to make amendments to the Connecticut General Statutes to allow for electronic filing of forms in lieu of any application for issuance or renewal of registration and electronic signatures, the IRP/Single State Registration System (SSRS) Manager wrote a memo to a point person in the

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[1] H.R. 883, "Government Credit Card Reform Act", introduced by Rep. James P. Moran (D-VA) and 16 cosponsors.

DMV Legal Services Division. The memo outlined what was needed--the acceptance of an electronic filing of an application, insurance, bond, endorsement, certificate or receipt in lieu of a paper document, and which section of the statute is concerned. It also assigned responsibility to the Commissioner to establish criteria and standards for the authentication of electronic signatures and the technology or system to be used to do so. The legislation point person in the DMV then will review this document, write the draft legislation and work with the legislature for its passage.

B. Cooperate to take advantage of relative strengths of all partners and interested parties.

Because CVISN is designed to connect systems that previously were operated separately, it is only natural that developing good *cooperation* is critical to the success of the project.

> - Identify all interested parties and arrange agreements and working arrangements to accommodate the appropriate level of involvement for each party.
> - Recognize the internal organization of a multi-agency project and emphasize its strengths.
> - Take advantage of expertise, testing, and feedback available through cooperation with interested parties.

Identify all interested parties and arrange agreements and working arrangements to accommodate the appropriate level of involvement for each party.

There are many potentially interested parties for CVISN projects. The states involved in the model deployment have taken different approaches to draw organizations into the decision making process. By identifying the appropriate level of involvement initially, it is possible make plans to keep all parties informed, as well as incorporate their concerns in a timely manner.

Most states included all agencies that performed CVISN related functions in the decision making process. Oregon is an exception to this pattern. Because the State Patrol operates as one of multiple contractors to the MCTB for enforcement, rather than as a partner, they have been kept informed of progress, but not included as an equal partner in the pilot. To date, this arrangement has worked smoothly.

Three of the pilot states visited had multiple agencies involved in the project. Washington has three, California has four, and Connecticut has six, although three primarily do the routine work. In a sense, Connecticut has drawn in some of the agencies with peripheral interests in the project that the other states are simply keeping informed at this stage. In Connecticut, a unanimous vote among all six agencies involved is required for key decisions.

Once the appropriate involvement has been determined, managing cooperation across agencies, levels of government and industry is the function of the project manager. There are two types of cooperation that are important to consider: among CVISN project partners, and between those partners and other interested parties. These two types are discussed under the next two suggestions.

Recognize the internal organization of a multi-agency project and emphasize its strengths.

Depending on the choices made previously about the organization of commercial vehicle programs, there may be anywhere from one to four or more agencies involved in a CVISN project. The states involved in the CVISN model deployments included as partners all or most agencies with responsibilities that related to CVISN goals. By recognizing the comparative advantages of each agency in a multi-agency project, it is possible to divide the work to better utilize resources and work around limitations and constraints of each agency. The cost of cooperating closely is the staff time needed to carefully work through issues in developing an MOU.

The states with multiple agencies or working with other states had increased coordination needs compared to single agency states, but the different agencies or states were able to compensate for each others' weaknesses and take advantage of relative strengths. Including multiple agencies increased cross-pollination with other programs and the potential for a greater variety of contacts outside of the agency. In addition, it protects against loss of expertise by providing redundancy of knowledge when there is staff turnover.

Multiple Agencies

In all three multiple agency CVISN states in this study, CVISN has required the broadest participation and closest coordination across agencies of any project. As a result, there are both opportunities and problems to overcome.

Having multiple agencies allows the project to use resources, such as staff, budget, and facilities of all agencies involved. Because the agencies are likely to have different constraints on those resources, the flexibility of multiple partners can overcome some obstacles more quickly than if only one agency was involved. For instance, in Washington, even though the work done was not exclusively for that agency, the first Washington state match for the pilot came from the WSDOT because it had the funds available.

California has been able to manage the project through the CHP, while using the significant expertise of the System Architect who works in the DMV. Because the System Architect has had experience with major data processing and other related projects in the context of other DMV activities, he is able to bring a great deal of context to CVISN as well as technical know-how. Other states with multiple agencies involved have set up layers of workgroups so that staff in different agencies with responsibilities in similar areas can work on problems together.

Multiple agencies may operate under different policies, procedures, or regulations. These differences may work to the advantage of the project, but these differences may also create additional constraints. For instance, in California one agency reports to a publicly elected board. As a result, it tends to follow some different procedures than the other agencies involved, particularly with respect to procurement. Because of these differences, it has been difficult for the

agency to join ongoing projects in the past. By involving the agency at the outset of the CVISN project, the concerns of the agency were addressed.

It is common for pairs of agencies to have experience working together, but not necessarily the full group of agencies. For instance, in Connecticut, the Enterprise System was set up by the DPS, the DOT and the Capital Region Council of Governments (CRCOG) to test a police accident reporting system on pen-based laptops. Safety inspections are conducted by both the DPS and the DMV so these two agencies have historically worked closely. Routine interactions, such as registration and payment of taxes require that the DMV and DRS work closely. CVISN is the first time that all of these agencies as well as the Department of Environmental Protection and Department of Economic & Community Development (DECD) have worked together as a group.

In situations where agencies have not all formally worked together in the past, developing a Memorandum of Understanding (MOU) for multiple agencies can be a very time consuming process. In Washington, the three agencies involved had never worked together as a group, although they had worked in pairs, and two had an existing MOU. Because of this unfamiliarity with each agency's requirements, the legal staff had not yet developed a three way MOU at the time of the site visit.

Multiple States

Having multiple states involved in CVISN magnifies the effects discussed for multiple agencies. In addition to having a different set of agency specific policies, procedures, and regulations, there are state policies, procedures, and laws that are different. It can work in the project's favor by allowing activities to occur in the state where it is easiest and fastest. For instance, Washington took the lead in the Washington-Oregon pilot because Oregon's legislature would not be meeting soon enough for their approval to apply for federal funds to occur before the application deadline. Because the federal funds would require a state match, the Oregon legislature needs to approve the possibility of that use of state funds. Washington does not have the same constraint to gain permission before applying for federal funds, and consequently it became the logical choice to be the lead state for the pair, in terms of managing the flow of funds.

Besides helping with procedural issues, the states can bring complementary expertise. Washington has experience with using laptop computers in enforcement, while Oregon has been involved in electronic clearance through operational tests such as the ITS/CVO Greenlight Project. The disadvantage of using a formal pairing is that both states are vulnerable to high level decisions made in either state. Because of several recent high profile, expensive failures of information system development projects, the Washington CVISN staff was required to contract for a feasibility analysis of CVISN. The Department of Information Services will use that study to determine whether or not the state should proceed with CVISN.   Oregon has already given Washington its share of the nonfederal match for the project. Consequently, steps have been taken to protect the parties involved in case of default. If Washington drops out of the pilot project it would still have to pay the money for the work spelled out in the contract.

Take advantage of expertise, testing, and feedback available through cooperation with interested parties.

The CVISN project can benefit from cooperation with a number of potentially interested parties. Table 1 summarizes a number of types, why cooperation with them could benefit the project, and how that cooperation could benefit them. The primary cost to the project is increased communication needs, which is discussed in greater depth in the next section.

Table 1--Cooperation with other interested parties		
Interested Parties	**Project Reasons for Cooperation**	**Interested Parties' Reasons for Cooperation**
Other state agencies or programs	• Effect of CVISN on their work • "Contracting" arrangements	• Effect of CVISN on their work • "Contracting" arrangements
Local universities	• Technical expertise • Project management support	• Research interests • Funding
National and regional organizations	• Interstate coordination and problem solving • Sharing information	• Organization function
Other states in region	• Interstate coordination • Problem solving, gain from others' experience • Resource sharing	• Interstate coordination • Problem solving, gain from others' experience • Resource sharing
State trucking associations	• Political support • Reality check • Marketing support	• Ability to have input into programs that affect membership
Federal Government	• Provide feedback • Funding	• Improve program • Monitor funding
Individual carriers	• Test technology prior to full deployment	• Gain access to technology earlier

Other State Agencies or Programs

Outside of the CVISN partner agencies, there are a number of other state agencies or programs that may have interest in the changes brought about by CVISN. They range from agricultural programs concerned about inspection of trucks for agricultural pests to automobile registration programs considering, or trying to avoid public pressure for, the possibility of electronic transactions.

Cooperation with these other programs means maintaining some communication so that they are kept informed of developments and potential interactions. Cooperating with these programs benefits the CVISN project by creating or maintaining other supporters of the project, and

reducing the possibility that conflicts with them could create problems with buy-in at higher levels.

Local Universities

Local universities can be a great resource for the transition to higher technology. Cooperation with universities in Washington and Kentucky was very helpful to the project because of the knowledge that these places had of the technologies. In Washington, the longstanding cooperation between the University of Washington and WSDOT was one factor leading to the use of advanced technologies to address congestion in the Seattle area. This experience has been the foundation on which their advanced technology projects have been built.

In Kentucky, the University of Kentucky Transportation Center plays an active role in the pilot. Prior to 1981, the transportation agency in Kentucky contained a Division of Research, which was renamed the Transportation Center and became part of the University's Department of Civil Engineering in about 1981. Kentucky legislation designates the Transportation Center as the Cabinet's sole source for state highway research. The Center provides all transportation-related technical and project management support, as well as assistance with outreach and information dissemination functions. Many former government employees are still at the Center engaged in the same kind of work performed prior to becoming part of the University, bringing long standing expertise and continuity to their tasks.

National and Regional Organizations

There are several national or regional organizations that are already playing roles in working through interstate institutional issues. The Western Association of State Highway and Transportation Officials (WASHTO) has helped resolve concerns related to roadside electronic clearance. The American Association of Motor Vehicle Administrators (AAMVA) was mentioned as a good vehicle for, among other things, developing national standards for communications protocols on Electronic Data Interchange (EDI) transfers. The interviewee believed that AAMVA might be particularly good for the role since non-CVISN pilot states are also included in its membership.

Other States in Region

Cooperating with other states in a region can be beneficial by saving resources through developing software once, rather than multiple times, and resolving issues to make borders more transparant to commercial vehicles. Both Washington and Oregon were planning to use a new oversize/overweight (OS/OW) system being developed by Utah at a cost to Utah of about $2 million. Although Washington will incur some costs converting the Utah system from Unix to a Windows environment, Oregon originally considered taking it as is. Oregon decided against pursuing this option when they realized that they needed to focus on correcting the Y2K problem in existing systems before taking on any new ones. They are not sure now exactly what their oversize/overweight system will look like in the future.

Communicating with other states, both those participating in CVISN and those unfamiliar with it, can be important in the long run by improving compatibility of state systems. State staffs range in experience and knowledge of CVISN. States with large programs, and hence large budgets, tend to be more automated and more knowledgeable about CVISN and other automation and management information systems. States with smaller programs may be completely unfamiliar with CVISN and its benefits, and unaware of how changes they may consider making in their commercial vehicle programs could affect their compatibility with CVISN and the states using CVISN. Both the Federal Government and states actively involved in CVISN are providing general training and outreach to all states including information on components and benefits, and technical information about architecture, standards, and compatibility issues for states considering improvements to their commercial vehicle programs.

These issues are addressed to a degree by the ITS/CVO Mainstreaming effort. The ITS/CVO Mainstreaming initiative is supporting the creation of state and regional ITS/CVO business plans and policy forums, as well as the appointment of "champions" to work with groups of states to promote and coordinate ITS/CVO deployment. A total of 37 states is participating in the initiative, organized into seven regional forums. As lead state of two mainstreaming regions, Kentucky provides assistance to other states in the development of their business plans. The CVISN Program Manager estimates that 50% of his time is spent promoting or performing ITS/CVO regional activities.

State Motor Carrier Associations

State motor carrier associations can be valuable sources of political support, as well as insight into the needs of their members and resources for marketing new CVISN services. In all CVISN model deployment states visited, the motor carrier associations were very supportive of the project, and even pushed for it to occur. Concern about motor carrier issues becoming lost in the DMV caused the trucking industry to lobby in Oregon for the creation of the Motor Carrier Transportation Branch as a separate branch of the Oregon Department of Transportation.

Connecticut has established a position of Industry Project Manager, held by the president of the most powerful trucking association in the state. The Industry Project Manager has been asked to set aside one day per week for project activities and is responsible for representing the industry's priorities at Council meetings and getting buy-in from carriers. The Industry Project Manager will be involved in the process of choosing the carriers that will participate in the pilot. The Industry Project Manager utilizes the services of the Northeast Transportation Institute (NTI) for tax, economic development, and safety issues research. The Institute is part of the American Trucking Associations (ATA) Foundation and is currently contracted by the State of Connecticut to write the ITS/CVO Business Plan. It also conducted the 1994 Connecticut ITS/CVO Institutional Issues Study on which many of the interagency and interstate structural relations for CVISN were defined.

Federal Government

The Federal Government needs feedback on how well the systems work, what issues arise, and what resources are required. The more information it has, the better it can structure the program to address those concerns.

Individual Carriers

Individual carriers are needed to test the new procedures and systems before they go into widespread use. They benefit by obtaining access to the new services sooner. A number of the large trucking companies in the Northwest have approached Washington and Oregon public sector partners volunteering to install transponders on new vehicles. The public sector partners in those states are also extending their relationship with industry to work with shipping lines to install transponders on shipments to allow tracking and Customs preclearance.

C. Recognize the need for proper communications

Communication includes all aspects of obtaining buy-in from management and staff, maintaining that support and providing information and feedback to other governmental entities and industry.

- At the start of the project, list all necessary communications and develop a strategy to ensure that they are carried out.
- Allow additional time to obtain buy-in and consider assigning an individual to coordinate all "communications" or "marketing" if multiple agencies are involved.
- Maintain support for the project by reporting progress frequently to upper management and elected officials.
- Maintain regular communication with program staff.
- Keep industry associations "in the loop" and take advantage of their contacts and business experience to market CVISN to motor carriers.

A comprehensive plan for communications is critical to the success of the project. CVISN is a relatively high visibility project to the private sector and potentially the general public, due to the large number of people and agencies potentially impacted by the project.

There are three general phases during which communication needs to occur: decision making, development, and implementation. During the decision making process, the focus is on presenting the advantages of CVISN to all of the entities that need to agree. During the development of the project, the emphasis shifts to ongoing communication of progress and changes that are occuring. This ongoing communication ensures continued interest in and commitment to the project. At the time of the site visits, CVISN had not been fully implemented in any state and, therefore, the required communication for this phase could not be determined.

At the start of the project, list all necessary communications and develop a strategy to ensure that they are carried out.

Table 2 summarizes the communication that needs to occur during the decision making process. The table lists all categories of agencies and people who need information, along with the agency or individuals responsible for providing that information, what information to provide, and what forums can be used.

Listing all necessary communication in this fashion, but more detailed and specific to the deploying state, can be very helpful in ensuring that all contacts are made. In states with multiple agencies involved, it can be easy to overlook a group unless responsibility for communications is assigned to an individual who is given the time to keep track of what is being done. In Washington State, attention was focused initially on management. Later, management realized that program staff were not receiving enough information to answer questions they were receiving from truckers and companies, and more emphasis was given to keeping program staff informed.

Table 2--Communication During Decision-Making			
Audience	**Responsible Group**	**Information**	**Forums/Effort required**
Legislature and governor	State agencies with program responsibility and motor carrier associations	• Cost savings to state from CVISN • Economic benefits (increasing commerce) • Improved service to motor carrier industry	Presentations, meetings
Oversight agencies*	State agencies with program responsibility	• Benefits and feasibility of CVISN • Fiscal, technical and managerial impacts	Meetings, reports
Motor carrier associations	Project management staff	• Benefits to carriers • Multistate orientation, compatibility across states	Advisory committee meetings
Upper management in state agencies	Project management staff	• Benefits of CVISN (efficiency, safety) • Specific concerns	Presentations, phone calls, memos
Project management staff	Federal Government and other states (mentoring)	• What CVISN is • How the project should be structured	Training workshops, phone calls, reports
Program staff in state and local agencies	Project management staff	• What CVISN is • How state laws, regulations, policies and procedures will be affected • Address concerns about efficiencies leading to loss of jobs	During regular training, staff meetings, informal discussions of best ways to accomplish project goals

* Administrative Services, Information Technologies, Attorney General, etc.

Allow additional time to obtain buy-in and consider assigning an individual to coordinate all "communications" or "marketing" if multiple agencies or layers are involved.

Depending on how many state agencies are involved, communication to gain buy-in can become a complicated and time consuming task. By planning for the additional time, and dedicating an individual to coordinating the effort the timeline for the project can be set in a realistic manner and it may be easier to ensure that all necessary contacts are made. The pilot states with multiple agencies sharing commercial vehicle program functions found that obtaining buy-in for CVISN took significantly longer than for projects of a comparable size and run by a single agency. The greater number of individuals to contact and convince, rather than objections to cooperating across agencies, drove the need for more time. In California, the larger number of actors resulting from the size of the government and consequent multiple agencies involved and the resulting additional layers of approval needed complicated and lengthened the task of gaining buy-in.

Obtaining and retaining buy-in is an ongoing process. As the project develops, economic and political climates change, and as staff changes, communications targeted to acceptance of the program need to continue. In Connecticut, an early retirement program led to major loss of staff and changes in assignment of the remaining staff. As a result, a new effort to inform and educate management was required. The Management Coordinator, a staff person assigned to keep all project participants informed, played a major role in maintaining program continuity and buy-in during the major staff changes. There is often a sequence of contacts that need to be made and information provided. For instance, project management staff and upper management in agencies need information on what CVISN is and what benefits it can provide before they can contact the legislature and governor for funding.

Maintain support for the project by reporting progress frequently to upper management and elected officials.

As the emphasis shifts from obtaining buy-in to developing the CVISN project, the type of information that needs to be communicated also changes. Table 3 summarizes the communication that needs to occur during the development of a CVISN project.

Because CVISN tends to be a high visibility project involving the motor carrier industry, updates on progress to elected officials, upper management, and possibly oversight agencies are critical to maintaining their support during development of the project. In some of the states, the process of obtaining buy-in for the project resulted in upper management and elected officials developing a strong interest in how it is proceeding.

Table 3--Communication During Development			
Audience	**Responsible Group**	**Information**	**Forums**
Legislature and governor	State agencies with program responsibility	• Progress of project	• Briefings
Oversight agencies	State agencies with program responsibility	• Progress of project	• Briefings • Reports
Project management staff	Federal Government and other states (mentoring)	• Information on development issues • Development of related projects (software, etc.) • Standards	• Phone calls • Workshops
Upper management in state agencies	Project management staff	• Progress of project • Specific concerns	• Presentations • Phone calls • Memos
Program staff in state and local agencies	Project management staff	• Progress of project, planning process • How state laws, regulations, policies and procedures are affected • New policies on release of data across all agencies • Information on updates to software • Information on technologies • New skills related to auditing and providing help desk functions	• Part of regular training • Staff meetings • Informal discussions of best ways to accomplish project goals
Motor carrier associations	Project management staff	• Procedures • When new procedures and technologies will become available	• Advisory committee meetings
Motor carrier companies	Program staff and motor carrier associations	• Benefits of new procedures to them • Level playing field through better safety enforcement • New procedures, forms and technologies, and when they will become available • Laws, regulations, policies about release of data	• Association newsletters, other media such as videos shown at meetings • Existing training/ orientation programs • Libraries • Internet
Other state agencies and programs	Project management staff	• Plans and procedures and possible impacts on the other programs (create demand for electronic transactions, etc.)	• Advisory committee meetings • Phone calls • Memos
Management in agencies in other states unfamiliar with CVISN	Federal government and other states involved in CVISN	• General information on what CVISN is • How changes they may consider making in their commercial vehicle programs could affect their compatibility with CVISN and the states using CVISN.	• Associations, such as AASHTO and AAMVA • ITS/CVO Mainstreaming

Maintain regular communication with program staff.

Program staff are a valuable asset. Their experience with the program can be used to improve development of CVISN, and their contacts with truckers can be used to disseminate information to industry. It is also imperative that they are informed of possible changes to their jobs.

Current program staff can provide valuable input during the development of CVISN. Prior to any formal attempt to get buy-in for the project from staff and management in California, the project staff at DMV and CHP talked to program staff to get information on the best ways of accomplishing project goals. Later when the plan was developed, these informal contacts helped with buy-in from program staff because they felt comfortable with the choices the CVISN project staff made.

CVISN is likely to change some current jobs. Communicating with staff about those changes can help allay fears about those changes or the potential for reductions in staff. In Washington, the Department of Licensing (DOL) marketed CVISN to staff by explaining the efficiencies that result. Consequently, the biggest hurdle in gaining staff buy-in was overcoming the perception that electronic data flow will result in a loss of jobs. CVISN is an ongoing agenda item at staff meetings at DOL. Kentucky has addressed these concerns by providing cross-training to employees where positions may be eliminated as a result of CVISN. Project management also needs to provide information to staff in order to help them do their jobs, considering the types of questions that staff will receive from truckers. This thought will aid in developing relevant training programs.

Keep industry associations "in the loop" and take advantage of their contacts and business experience to market CVISN to motor carriers.

Keeping motor carrier associations involved can also pay off in the long run, as they can participate in communicating with their members about CVISN, and even marketing the program. Washington and Oregon are using SAIC to be its Transponder Administrator, with Northwest Transporter, a regional trucking association, subcontracted to market transponders to motor carriers in those states. The pilot had issued a request for proposals (RFP) for organizations to bid on providing that service. The team including Northwest Transporter was selected in part because the pilot team believed that they understood their membership and would be best able to market the new service to it.

Marketing CVISN to small carriers is particularly important. Many larger carriers are already aware of the benefits that CVISN can provide as a result of their professional staffs. Smaller carriers may either benefit less or be unaware of how they can participate. To overcome these impediments, Kentucky is planning to provide truckers with automated access to system information at local libraries, state office buildings and via the internet. Plans are also underway to introduce the systems at seminars with accounting firms and other possible third party providers. Consequently, in the near term, states will need an automated and manual system for credentials and taxes to allow carriers to continue to use paper. The better the marketing, the more carriers will switch to the electronic system.

Implementation of System

No states have reached the stage of having a well-established CVISN deployment. However, the CVISN Level I deployment program builds on the experience of prototype and pilot states in the form of training, mainstreaming and the development of other documentation such as the CVISN toolkit and EDI Implementation Guide. The lead states for mainstreaming, such as Kentucky, are benefiting because the continual involvement at the regional level provides additional impetus to succeed with the system implementation.

D. Plan training for both program staff and motor carrier employees

CVISN changes certain procedures and shifts responsibilities in significant ways, leading to the need for training of both program staff and motor carrier employees. For instance, truckers need to understand when it is permitted to bypass a weigh station under electronic clearance. In Washington, when electronic clearance was first allowed, some truckers continued to stop at weigh stations even when they were clear to continue because they were uncertain on whether or not they could do it legally and did not want to take the risk. Responsibilities under the process of applying for credentials also change so that motor carrier employees will need training on applying electronically, and program staff will need training on auditing and providing help desk functions.

State agencies that are implementing CVISN will need to provide training for their staff on a range of topics, primarily related to changes in state laws, regulations, policies and procedures. Training in electronic credentialing, tax collection, and electronic funds transfer will need to be done for staff in order to teach them the new processes and technologies involved. This training will need to be ongoing as information on updates to software becomes available. Training on policies related to release of data may become more important as more staff have access to more information.

The states and agencies currently deploying CVISN range in their approaches to training. Those agencies with existing formal training programs seem inclined to include CVISN in those programs, while other agencies currently prefer a combination of updates at staff meetings and on-the-job training. When staff are trained, they may also be able to instruct carriers on the new procedures.

Motor carriers beginning to apply for credentials electronically or use transponders for preclearance need training on procedures, as well as information on how CVISN procedures can benefit them. Connecticut motor carrier departments offer training seminars at the Motor Transport Association of Connecticut. Large companies need less help than small ones, which may not even have computers that could handle conducting electronic transactions.

E. Manage the Expectations of All Partners

It is important that all partners are aware of the both the benefits and limitations of CVISN. For instance, it should be made clear that roadside electronic screening can substantially reduce, but not eliminate the number of times that a truck will be stopped. The concerns of law enforcement about seeing trucks need to be balanced with the interests of motor carriers in getting the greatest benefit of participating in the program.

IV. Conclusions and Next Steps

A. Summary

The philosophy behind the suggestions discussed in this report is that CVISN is a natural part of efforts to improve and streamline state government through interagency cooperation and the use of advanced technologies. With the exception of staffing changes resulting from reorganization, interviewees were generally unable to quantify the costs or benefits of institutional changes separate from the project itself. However, they acknowledged that the changes were either necessary or beneficial to successful implementation.

Most of the suggestions address how the necessary cooperation and communication can be developed, no matter where the states start. Certain preconditions help CVISN implementation because they are in harmony with it:

- High level policy support for interagency cooperation and advanced technologies
- Good working relations among all commercial vehicle programs, or a centralized program
- A good relationship with the motor carrier industry

Whether or not these factors exist, the project can be improved by comprehensive planning and incremental implementation:

- Involve interested agencies to the appropriate degree and ensure that their expectations are carefully managed
- Consider and organize the communication necessary for a high visibility project

B. Issues to Track as Model Deployments Progress

A number of issues arose either as concerns of states or situations and choices with long term consequences that will become clearer as CVISN progresses.

There are concerns about attracting companies with relatively few trucks to the program. First, it is not clear whether or not the companies will be interested or able to participate. Many smaller carriers perform relatively few transactions with the states and may not be interested in automating the process. They also may not have computers with modems or that are capable of

running the software required. Second, these companies tend to be the ones with the most questions about credentials because they do not have enough transactions to require a staff person dedicated to dealing with them. In Washington, these companies have expressed concern about maintaining access to state staff for questions.

Although some training needs are anticipated, the specifics and the best way of conducting training, both for program staff and motor carriers have not been established. Sources of funds for training have also not been determined. As the states move further along in the pilots, their experience can be considered. At the Federal level, a needs assessment has been done and several ITS/CVO overview courses are under development that can be delivered to the states. Also, a truck demonstrating technologies is travelling across the nation to educate about the use of ITS/CVO technologies and programs to promote safety, simplicity and savings.

Additional necessary legal and regulatory changes may come to light as the pilots develop and become fully operational.

As the pilots advance, the effect of the choice of which agencies to include as active members of a CVISN team should become more evident. On one extreme, Connecticut is including all agencies with any interest in the outcome of the pilot, while other states are just keeping other agencies informed. Agencies that are being informed but not included in the decision process range from interested agencies with related functions to agencies with contractual relationships, such as law enforcement in Oregon.

The purpose of the prototypes and pilots is to develop and test the standards. These standards will be available to all states as CVISN Level I capabilities are deployed. The OMC is planning to hold a series of workshops for interested states, beginning in early and mid 1999, to educate states about CVISN, including discussion of the CVISN architecture and standards.

Appendix

CVISN Institutional Benefits Questions

Introduction for CVISN Interviews -

◊ **Introduce interviewers**

◊ **Purpose of Interviews and Study**
The Volpe National Transportation Systems Center is supporting the Department's Joint Program Office (JPO) for ITS and their evaluation of the Model Deployment Initiatives. In particular, Volpe Center staff is responsible for conducting the Institutional Benefits Study. The objective of the study is to develop checklists for success to which other public sector agencies can refer when they are in the beginning stages of improving their CVO related programs and working toward implementing CVISN.

Through the study, we will gain an understanding of the organizational structure that enables your agency to incorporate CVISN into your operating environment. We will identify any organizational changes or developments within your agency which have enabled or facilitated your participation in the CVISN pilot, what it cost to make these changes, and the benefits that they derived. We are attempting to identify those changes and developments that occurred *as a result of your response* to the CVISN Request For Proposal and *selection* to participate as well as those that occurred *prior to your application* that may have facilitated your participation.

For the purposes of this interview, the term "organizational change" encompasses changes to the organizational structure, laws, regulations, and agency policies and procedures. For each change or development discussed, we will discuss the situation or issue that brought about a change or organizational development, the actual changes that were made to the organization to address the issue, the cost of the change, and how your organization has benefited from the development.

◊ **Discuss interview process and confidentiality of interviews**

Background
What agency
1. What are the responsibilities of this agency as they relate to commercial vehicles in general, and the CVISN pilot in particular?

Interviewee's position in agency
1. What is your job title and department / division? (should already have this info, inquire if correct)
2. What are your job responsibilities and what decisions are under your authority?

Project
Changes to relevant agency policies and procedures to implement CVISN
1. Please describe your policies and procedures for administrative processes/safety information exchange/inspections (choose one as appropriate for interviewee) before you began automating or improving them.
2. What agency policies or procedures were changed or modified over time leading this agency (or your department/division) to its involvement with the CVISN pilot?
3. Under CVISN, how will your policies and procedures change in this area? Have you changed your coordination and communication methods in order to implement CVISN?

Reasons
4. What convinced you to make improvements to your program and to implement CVISN?

Costs
5. What costs, including staff time, have you incurred as a result of changes in policies and procedures to implement prior changes and CVISN?

Benefits
6. What benefits, including improved efficiency or effectiveness of the CVISN pilot, were achieved as a result of the policy or procedural change? Are there any additional benefits expected? Have these actual or projected benefits been quantified?

Changes/developments to interactions with trucking industry to implement CVISN
1. Historically, what has been your relationship with trucking industry associations or companies? Have you included the trucking industry in an advisory role in the development of your plans? If so, how? What did it take to gain their involvement? What difficulties have you faced in incorporating their input?
2. Have you made any changes to your relationship with trucking industry associations or companies in order to design or implement your CVISN pilot?

Reasons
3. What caused you to change your relationship with the trucking industry?

Costs
4. What costs, including staff time, travel, or consultants, have been involved in changing the relationship or increasing interactions?

Benefits
5. What benefits including improved efficiency or effectiveness of the CVISN pilot, were achieved as a result of the trucking industry relationship change? Are there any additional benefits expected? Have these actual or projected benefits been quantified?

Changes to laws and regulations to implement CVISN
1. What are the relevant laws and regulations governing your agency's commercial vehicles activities?
2. Have changes in these laws or regulations led to changes in the program or affected interest in CVISN?
3. Have changes to the program or the initiation of the CVISN pilot and its subsequent work required, or will require, any new legislation or regulations to be enacted by the state? What are these changes?
4. Have intellectual property rights and liability concerns been raised? If so, how have they been addressed?

Reasons
5. What are the reasons for the changes to legislation or regulations?

Costs
6. What costs, including staff time or loss of some authority, were incurred in order to effect the changes to laws and regulations? If there were multiple changes, were any more difficult or costly than the others? Are there any additional costs expected?

Benefits
7. What benefits, including improved efficiency or effectiveness of the CVISN pilot, were achieved as a result of the legislative or regulatory change? Are there any additional benefits expected? Have these actual or projected benefits been quantified?

Changes to organizational structure to implement CVISN
1. Do management and staff responsible for operating the current commercial vehicle (monitor and control) system also have primary responsibility for the CVISN pilot? Who is responsible for the major tasks (credentialling, inspections, etc.) involved with implementing CVISN in this agency?
2. Have prior changes in organizational structure affected your ability to participate in the CVISN pilot?
3. Has the organizational structure within your agency changed as a result of CVISN or prior changes to the program? How?

Reasons
4. What were the exact reasons for the changes/reorganization? Did legal or regulatory changes, a new facility, hardware, software, or other equipment lead to a need for organizational changes? Are there additional changes planned?

Costs
5. What costs, including staff time, office space, moving costs, or equipment, were incurred to effect the organizational change? Are there any additional costs expected?

Benefits
6. What benefits, including improved efficiency or effectiveness of the CVISN pilot, were achieved as a result of the organizational change? Are there any additional benefits expected? Have these actual or projected benefits been quantified?

Changes/developments to interagency MOUs/working groups to implement CVISN
1. What CVO coordination efforts have preceded this CVISN pilot? Was your agency involved from the outset?
2. How is the CVISN pilot being coordinated with existing systems within the state? How is it being coordinated with organizations?
3. Have some agencies or jurisdictions been left out that should be involved? Which ones? Why?
4. Describe the negotiation process that led to the CVISN management structure. Who pulled the parties together? How many meetings were required over how long a period? Who was responsible for setting up and developing agendas for the meetings? What were the agendas of the meetings?
5. Were there any critical issues in developing the management structure that could have been "showstoppers" or on-going barriers to inter-agency coordination, communication, and cooperation?
6. Describe the decision-making process and how authority for the CVISN pilot is distributed among agencies.
7. How were the focus and optional systems/technologies for the pilot determined? How were different agency priorities handled?
8. How is it decided which agency and who within the agency will be responsible for the various aspects of the CVISN project?
9. At what point in the partnership development process were the financial and staff commitments from each partner required? What issues were involved in obtaining these commitments?
10. How are CVISN items procured and services contracted? Which agency handles the procurements and contracting? Is this process unique or innovative? How? Any special provisions in the bid process (sole-source, pre-approved bidders, design-build) or contract language (product warrantees, operator training or other on-going services)? What are the benefits and advantages from using this process? What are the costs and disadvantages of using this process?
11. What assurances does the partnership have for long-term operational and maintenance support from the current participants? In the future, will additional partners and participants be sought? Why (funding, expertise, products)?
12. Has this work been tied to the metropolitan ITS efforts being conducted within your state? Where does coordination occur? Who initiates it? What are the benefits and costs of coordinating these efforts?

Reasons (No questions)

Costs

13. What have been the costs of changes in interagency coordination associated with the CVISN project?

Benefits

14. What benefits, including improved efficiency or effectiveness of the CVISN pilot, were achieved as a result of changes in interagency coordination? Are there any additional benefits expected? Have these actual or projected benefits been quantified?

Changes to staffing/training to implement CVISN

1. What are your current staffing levels in the functions for which CVISN is being implemented? What types of skills are represented?
2. Have your staffing levels or employee skills changed as a result of past changes to the program?
3. Do you expect changes in staffing levels once CVISN is implemented? What type of training do you need to implement CVISN? Do you expect ongoing training needs? How do you expect to gain access to necessary skills (new hires, outside consultants, not able to meet the need)?
4. How did you identify the necessary skills? Has the institutional structure of this agency (positively and negatively) impacted the ability of you and your staff to gain knowledge regarding CVISN? How?

Reasons

5. What characteristics of CVISN or previous program changes required the changes in staffing or training?

Costs

6. What costs, including staff time, travel, tuition, trainers, or consultants, have been involved in meeting the staffing and training needs identified? Is local training available? Have some agencies or CVISN functions required more training or changes in staffing than others?

Benefits

7. What benefits, including improved efficiency or effectiveness of the CVISN pilot, were achieved as a result of the staffing or training change? Are there any additional benefits expected? Have these actual or projected benefits been quantified?

Changes to process of getting buy-in from management and staff

1. What process do you usually follow to get buy-in from management for projects of the magnitude of the CVISN pilot? Who are involved? How do you get buy-in from staff for major projects?
2. Did you need to do anything different to gain support for this pilot from what you usually do? Who was involved in developing the concept? How much upper management support do you have? What did you do to ensure (increase the chances) that staff would use the new system?

Reasons

3. What is the reason for the changes that you made for CVISN in the process that you usually follow to get buy-in from management and staff ?

Costs
4. What costs have been involved, including staff time, in any additional effort that you may have made to get buy-in?

Benefits
5. What benefits including improved efficiency or effectiveness of the CVISN pilot, were achieved as a result of the buy-in process change? Are there any additional benefits expected? Have these actual or projected benefits been quantified?

Changes/developments to interactions with other states
1. How do you currently interact and coordinate with other states on CVO issues?
2. Have you made any changes to your relationships with states in your region in order to implement CVISN or accomodate other program changes? Do you expect your relationships with other states to change as a result of implementing CVISN? How?

Reasons
3. What are the reasons for the changes that you have made to your relationships with other states?

Costs
4. What costs, including staff time or travel, have been involved in changing the relationship or increasing interactions?

Benefits
5. What benefits including improved efficiency or effectiveness of the CVISN pilot, were achieved as a result of the interstate relationship change? Are there any additional benefits expected? Have these actual or projected benefits been quantified?

Wrap-up / Summary
This concludes the formal interview.
1. Are there any other items regarding organizational changes you wish to discuss?
2. Do you want to elaborate on anything previously discussed?

⇒ Reiterate that this information will be used to develop **organizational guidelines** that other agencies can consider when deploying ITS.

DOCUMENTATION (obtain relevant material)
- CVISN Proposal
- State CVO Institutional Issues Study
- CVISN Management Structure Chart
- Agency Organization Chart
- Partnership Agreements (MOUs, etc.)
- Legislation (current and former text)